

# Intelligent Gate Drivers

## for IGBTs and Power MOSFETs

### Description

The intelligent gate drivers of the IGD type series are single-channel drive components designed for IGBTs and power MOSFETs. They were developed specifically for the precise and reliable driving and protection of high-power modules, high-voltage modules, series and parallel circuits.

The drivers IGD608AI/AN and IGD615AI/AN are mutually pin-compatible and differ only in their driver power. Each driver has an integrated DC/DC converter with a power of 6 W. Transmission of the drive information and of the status acknowledgement is electrically isolated. The drivers represent a complete solution and can be used for practically all known converter topologies.



### Product Highlights

- ✓ Suitable for IGBTs and power MOSFETs
- ✓ Protect the power transistors
- ✓ Extremely reliable, long service life
- ✓ High gate current of  $\pm 8A$  and  $\pm 15A$
- ✓ Electrical isolation 4000 Vac
- ✓ Electrically isolated status acknowledgement
- ✓ Monitoring of power supply and self-monitoring
- ✓ Switching frequency DC to MHz
- ✓ Duty cycle: 0... 100%
- ✓ High dv/dt immunity, guaranteed  $>50,000V/\mu s$
- ✓ Shorten development time

### Applications

- ✓ Inverters
- ✓ Motor drive technology
- ✓ Traction
- ✓ Railroad power supplies
- ✓ Converters
- ✓ Power engineering
- ✓ Switch-mode power supplies
- ✓ Radiology and laser technology
- ✓ DC/DC converter
- ✓ Research
- ✓ RF generators and converters

## Data Sheet

### Important Note

The drivers IGD608AI/AN and IGD615AI/AN are a further development of the tried-and-tested IHD680AI/AN half-bridge drivers. In contrast to the IHD drivers, however, the IGD drivers are single-channel components. Thus the entire 6-W power of the DC/DC converter is available for driving a single (large) power semiconductor. Drivers are available for maximum gate currents of  $\pm 8$  A and  $\pm 15$  A.

This data sheet lists only those specifications that differ for the IGD drivers of the IHD680AI/AN series. Data sheet IHD215/280/680 lists all other technical data.

The drivers of the IGD series are supplied in the same design as those of the IHD series and are largely pin-compatible with them. However, the drive channel described in the IHD data sheet as channel 1 is not present for the IGD drivers (see terminal assignment and blocking diagram).

The application hints in data sheet IHD215/280/680 also apply to these drivers.

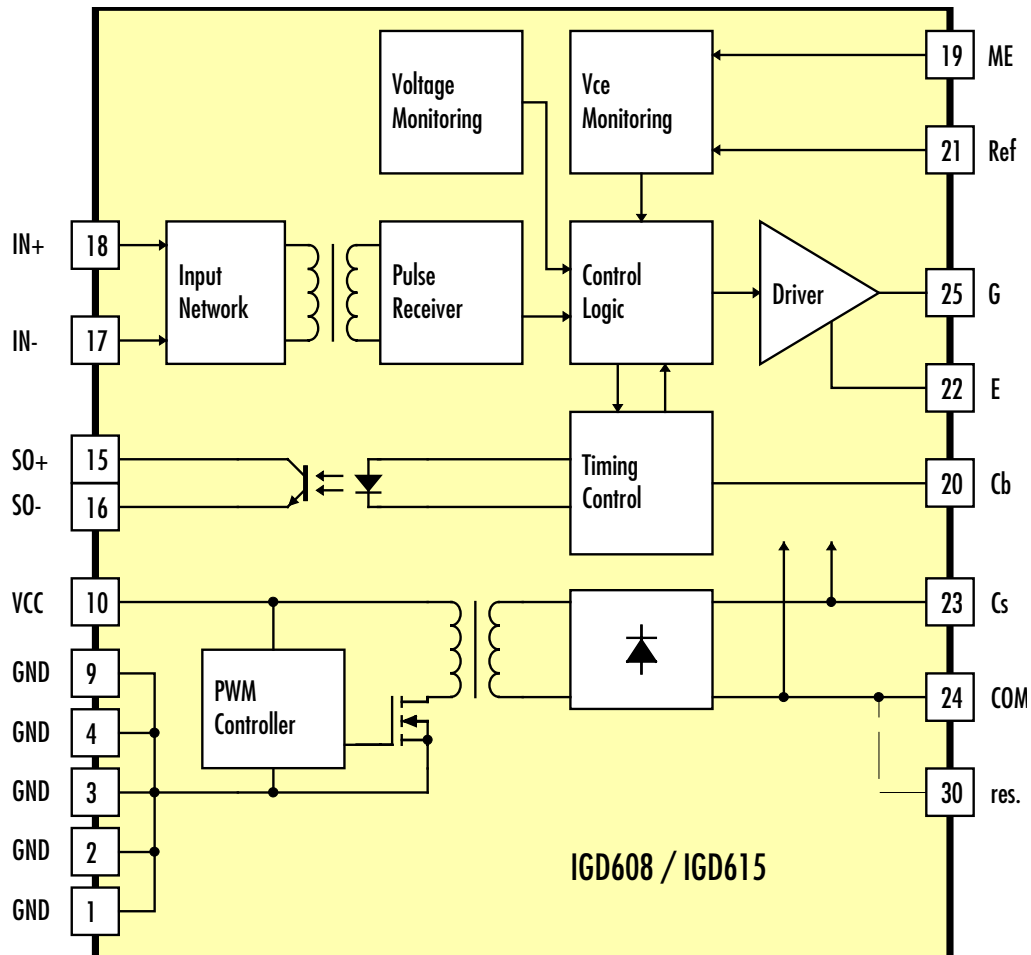
### Pin Designation

Pin	Desig.	Function	Pin	Desig.	Function
1	GND	Power supply GND	36	NC	Not connected
2	GND	Power supply GND	35	NC	Not connected
3	GND	Power supply GND	34	NC	Not connected
4	GND	Power supply GND	33	NC	Not connected
5		Not present	32	NC	Not connected
6		Not present	31	NC	Not connected
7		Not present	30	res.	Reserved (do not connect!)
8		Not present	29		Not present
9	GND	Power supply GND	28		Not present
10	Vcc	Power supply plus terminal	27		Not present
11		Not present	26		Not present
12		Not present	25	G	Gate driver output
13		Not present	24	COM	Virtual common
14		Not present	23	Cs	Blocking capacitor
15	SO2+	Status output +	22	E	Emitter / Source
16	SO2-	Status output -	21	REF	External reference
17	IN2-	Input inverting	20	Cb	Blocking time capacitor
18	IN2+	Input non-inverting	19	ME	V <sub>CE</sub> measurement

### Legend for terminal assignment:

Pins with the designation "not connected" and "reserved" are physically present but must not be connected to an electrical potential. Pins with the designation "not present" are not physically present.

### Block and Connection Diagram



### Electrical Characteristics

Parameter	Typ	min	typ	max	units
MTBF	All types		>2,500,000		hours
Maximum output current $I_{out}$	IGD608xx	-8		+8	A
	IGD615xx	-15		+15	A
Supply current $I_{cc}$	All types, without load		60		mA
Max. supply current $I_{cc}$	All types, with maximum load			450	mA
Output power DC/DC converter	All types (see Notes 3 & 11)			6	W
Efficiency $\eta$	internal DC/DC converter		85		%

All data refer to +25°C and  $V_{cc} = 15V$  unless otherwise specified

## Data Sheet

### Ordering Information

#### Drivers for $\pm 8A$ gate current

Standard version (0...70°C)	IGD 608 EN
Industry version (-40...+85°C)	IGD 608 EI

#### Drivers for $\pm 15A$ gate current

Standard version (0...70°C)	IGD 615 EN
Industry version (-40...+85°C)	IGD 615 EI

### Other Products and Information

#### Other intelligent drivers (Half-bridge drivers, Six-pack drivers etc.)

Please ask for following overviews from CONCEPT (also to be found on the Internet):  
"Overview of Intelligent Drivers Standard Program"  
"Overview of SCALE Drivers"

#### Evaluation boards

Please ask for following overview from CONCEPT (also to be found on the Internet):  
"Overview and Price List of Evaluation-Boards"

### Manufacturer

### Your Distribution Partner

CT-Concept Technology Ltd.  
Intelligent Power Electronics  
Hauptstrasse 3  
CH-2533 Leubringen / Evilard  
(Switzerland)

Tel ++41 (0)32 / 322 42 36  
Fax ++41 (0)32 / 322 22 51  
E-Mail [info@ct-concept.com](mailto:info@ct-concept.com)  
Internet [www.CT-CONCEPT.com](http://www.CT-CONCEPT.com)  
Internet [www.IGBT-Driver.com](http://www.IGBT-Driver.com)

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